CLAIMS

What is claimed is:

1. A switch for receiving and forwarding data packets comprising:

at least one ingress port for receiving data packets, at least one of the data packets associated with a virtual LAN identifier;

at least one egress port for forwarding the data packets; and

forwarding logic which provides a translated identifier for the virtual LAN identifier, the forwarding logic comprising:

a filtering database that provides a forward vector for the translated identifier from a single search of the filtering database.

2. The switch of claim 1 wherein the forwarding logic assigns a default value to the virtual LAN identifier.

3. The switch of claim 1 wherein the translated identifier includes a group identifier and a group member identifier for the virtual LAN.

4. The switch of claim 3, wherein the filtering database includes a first entry and a second entry.

5. The switch of claim 4 wherein the filtering database provides the forward vector associated with the first entry when the translated identifier matches the first entry and provides the forward vector associated with the second entry when only the group identifier portion of the translated identifier matches the second entry.

6. The switch of claim 1 wherein the filtering database is a content addressable memory.

7. The switch of claim 1 wherein the filtering database is a ternary content addressable memory.

8. The switch of claim 1 wherein the virtual LAN identifier is stored in a header included in the received data packet.

9. The switch of claim 1 wherein the forwarding logic further comprises:

a forward vector table which stores the forward vector associated with the received data packet, the filtering database providing a pointer to the location of the forward vector in the forward vector table.

10. A switch for receiving and forwarding data packets comprising:

at least one ingress port for receiving data packets, each data packet including a MAC destination address;

at least one egress port for forwarding the data packets,

forwarding logic which provides a translated identifier based on a virtual LAN identifier associated with the received data packet, the forwarding logic comprising:

a filtering database which provides a forward vector corresponding to the translated identifier and the MAC destination address from a single search of the filtering database.

11. The switch of claim 10 wherein the forwarding logic assigns a default value to the virtual LAN identifier.

12. The switch of claim 10 wherein the translated identifier includes a group identifier and a group member identifier.

13. The switch of claim 13 wherein the filtering database includes a first entry and a second entry.

14. The switch of claim 14 wherein the filtering database provides the forward vector associated with the first entry when the translated identifier matches the first entry and provides the forward vector associated with a second entry when the group identifier portion of the translated identifier and the second identifier field match the second entry.

15. The switch of claim 10 wherein the filtering database is a content addressable memory.

16. The switch of claim 10 wherein the filtering database is a ternary content addressable memory.

17. The switch of claim 10 wherein the virtual LAN identifier is stored in a header included in the received data packet.

18. The switch of claim 10 wherein the forwarding logic further comprises:

a forward vector table which stores the forward vector associated with the received data packet, the filtering database providing a pointer to the location of the forward vector in the forward vector table.